

Chal - 0104
Cy 4 of 5
2 May 1958

MEMORANDUM FOR OPS RECORD

SUBJECT: Personal Equipment. Exhalation Valve Malfunctions.

Due to the deteriorating effect of ozone on latex, it was necessary in March 58 to replace all latex exhalation valve diaphragms with a silicone material diaphragm.

After many weeks of acceptance testing by WADC, the modified valve called MEV 28A-137 was accepted for field use and on 25 April released to the using agencies.

On 2 May, [] message 1676 (IN 38792) indicated that of 8 modified valves received 5 ruptured at 120 MM Hg. of pressure and that three were rejected due to the improper length of the counterpressure tube.

Our specifications to the manufacturer in requisitioning the modified valve covered both outlined discrepancies. The specifications were for diaphragm pressure capabilities in excess of 150 MM Hg. and counterpressure tube measurement of $2\frac{1}{4}$ inches. Specifications in addition called for a marked improvement in the quality control procedures heretofore observed by the manufacturer.

Action Taken -- The Firewal Co., prime contractors for this equipment was familiarized with the existing problem. Their recommendation was to deal directly with the manufacturer -- the Hawks Sierra Engineering Corp. of Sierra Madre, California.

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[] Chief Engineer of the Hawks Corp. was next contacted. The following statements are general quotations from his phone conversation. "Every valve of the new design is being individually tested to 150 MM Hg. pressure followed by a second testing to 175 MM Hg. Only valves qualifying beyond doubt are distributed. Valves are periodically removed from the assembly line for rupture point testing. This point has been reached at 40PSI." (1PSI = 51.7 MM Hg.) It is obvious by these figures that the manufacturers claim far exceed our maximum specifications. In regards to the improper counterpressure tube length... "We have made all necessary arrangements to assure that all MSV 28A-137 designated for your project will be 2½ inches in length."

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A message has been sent to EAFB, [] overseas units outlining information as quoted above.

EAFB has been notified to return to depot all valves with improperly dimensioned counterpressure tubes as well as the valves that have malfunctioned. Depot has been notified to anticipate receipt of these and to forward them to the Hawk's Sierra Engineering Corp. Attn: []

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A trip is being planned to visit EAFB as well as the Sierra Engineering Corp. Findings resulting from this trip will be attached to this document.

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Aviation Physiologist

DPS/DCI/RJT:gms

Distribution:

- Orig. - [] (RJT File)
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